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AUTHOR Morrison, Edward J.
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INSTITUTION American Personnel and Guidance Association, Washington, D.C.; Ohio State Univ., Columbus. Center for Vocational and Technical Education.
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ABSTRACT

The National Assessment of Educational Progress's efforts to measure progress toward a commonly accepted educational goal - vocational satisfaction and competence - are discussed. The attempt to operationalize the goal resulted in a set of capabilities prerequisite to the ultimate goal attainment. The difficulties with this "general" set are considered, one of which is that it does not assess capabilities specific to any given occupation. Such a task is viewed as overwhelming, necessary, but not susceptible to immediate solution. The remainder of the paper elaborates some possible interim assessment procedures. The author concludes that the assessment of vocational education to date has been ambitious and rigorous and that the difficulties inherent in the process are now exposed. (TL)

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But the Goal is Vocational Satisfaction and Competence!¹

Edward J. Morrison²

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Institutions, like most organized social activities, are established for reasons. That is, they are set up to achieve goals or purposes. These goals are important in our present discussion because any assessment of progress requires knowledge of the destination or goals toward which progress is intended, of the intended routes to the goals, and of any alternative, acceptable routes. Further, any responsible progress assessment must report on progress toward the announced goals of the institution, whatever other interesting or important things it might reveal.

A substantial number of individuals and groups have attempted to put into writing the goals of public education. Gagné (1965) reports that his analysis of these attempts reveals three goals for students on which there is at least verbal consensus: responsible citizenship, vocational satisfaction and competence, and the capacity for participating in and sharing a variety of aesthetic experiences. My experience with the statements of goals or purposes of some schools and school districts supports the hunch that many individual schools and districts hold these three purposes and would agree that they are their proper destination.

A basic task of an educational assessment effort, then, would seem to be to provide evidence concerning progress toward these three goals for students. Whether the National Assessment of Educational Progress did, in fact, set out self-consciously to measure progress toward these three goals, I do not know. However, they did bat at least .667 because two of the areas designated for study

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²Professor of Education and Research Coordinator, The Center for Vocational and Technical Education, The Ohio State University.

very early in their efforts were citizenship and vocational education. It is important that we remember during this discussion that vocational satisfaction and competence is widely recognized as a goal of education for all students and that progress toward this goal was what we intended to assess.

However useful such a goal as "vocational satisfaction and competence" might be for some purposes, it is nearly worthless in that form as a guide to assessment of progress. Somehow, such a goal must be translated into something which can be verified by observation. Further, if progress is to be assessed through observation of student performance, it is important to know the prerequisites to achievement of the goal. That is, it is important to know what must be learned en route to the goal.

The Assessment staff and its contractors went about the task of redefining the goal and identifying intermediate objectives quite systematically. They began by asking the question, "What would a person have to know or be able to do if he is to be vocationally satisfied and competent?" The answer finally selected was that he must be capable of career decision-making (a life-long process), of developing or forging a career, and of performing the tasks required by an occupation. Each of these prerequisites to vocational satisfaction and competence then was analyzed in a similar way to produce its prerequisites and the process was continued until statements were reached which described relatively simple capabilities. This procedure resulted in a set of capabilities (educational objectives) arranged in an initial hierarchical structure. It might be noted that capabilities toward the bottom of this structure tended to be not only relatively simple, but also general and recognizable as from such other Assessment areas as Reading and Writing, Mathematics, and Science.

The entire set had several very important advantages. It provided an unusually good definition of what is meant by "vocational satisfaction and competence." It provided a clear rationale and an explicit basis for specifying

exercises in the assessment. The structure identified dependencies between capabilities and, thus, provided a basis for selecting particular capabilities for assessment at the several age levels. Distance from the goal was definable, even for individual students, in terms of achievement position in the sequence of capabilities. Finally, a great variety of capabilities was included in the structure, including many which were non-technical or non-job-specific.

On the other hand, some significant problems were exposed as the analysis displayed the considerable complexity of the goal. For example, the structure which developed was a partially-ordered set. That is, vertical relations between capabilities were defined, but horizontal relations were not. One immediately obvious result was that a capability might be (and was) found in several branches of the structure. There was, in other words, some overlap of parts of the structure. This was a troublesome, but welcome, result since such recurring capabilities indicate a kind of generalizability. A second and less welcome problem was (and is) that some capabilities identified in the analysis can be learned only after their prerequisites have been acquired and are not equal to the sum of their prerequisites. Even if the student were capable of all of the prerequisites to such an higher-order capability, he might not be capable of integrating the prerequisites to achieve the higher-order capability. This raised the serious question of the proper level at which to write assessment exercises. But the most difficult problem, and one which still is with us, was presented by the sheer number of capabilities to be assessed. Hundreds of capabilities were defined by the analysis, far more than could be covered by the assessment. How could they be sampled to permit a sensible report?

The large number of capabilities available for assessment was considered an especially serious problem in that branch of the structure addressed to "perform the tasks required by an occupation." The problem here was not different formally from that in any other part of the analysis, but the tremendous number of occupations include an extremely large number of tasks, so many that even

enumerating them seems unthinkable and any attempt to assess their performance completely impractical. This presented the Assessment with a dilemma. It would be able to assess many peripheral, preparatory, facilitating, and important capabilities, but it would not be able to make comprehensive assessment of those capabilities for which people are hired, the so-called marketable skills.

This predicament was regrettable, of course, but the Assessment did about the only thing it could do under the circumstances: it decided not to try to assess "specific" vocational capabilities, in the first cycle at least, and renamed the area "Career and Occupational Development" which was thought to describe more accurately what was being assessed. One prominent vocational educator still argues that it should have been named "Career and General Occupational Development," or more pointedly, "Career Planning and Development," to make it as clear as possible that the Assessment is addressed only to those components of vocational preparation common to many or all occupations and now is making no attempt to determine the extent to which the schools are preparing students with capabilities for which they can be employed.

This turn of events saddened vocational educators and some others who realized that a major goal of education, one to which they are devoting much of their effort and toward which several million students are striving, would not be included in a National Assessment which they strongly support. They agree that present C.O.D. objectives are important and should be assessed - in fact, they helped identify them - but they also believe vocational competence to be a goal of consequence for all students which must be assessed and they are not willing yet to admit defeat.

It is true that individual vocational educators, including me, have specific disagreements with the decisions about some particular items in the present set, about some measurement matters, about some parts of the rationale presented, even about aspects of the overall Assessment strategy. The Assessment staff

can testify to the persistence with which some of us have pressed our points. But the same can be said about most groups participating in the development work. These are relatively minor problems which cannot deter vocational people from their efforts to get vocational education assessed. These people have endured decades of lip service, inadequate funding and poor publicity in spite of lofty pronouncements about the importance of vocational satisfaction and competence. They do not want to see this state of affairs perpetuated and given indirect sanction even unintentionally by exclusion of vocational assessment from this major educational event. Nor do they want the Assessment's omission of vocational content to be interpreted as abandonment of vocational preparation as a goal of public education. It is such concerns as these, and an eternal optimism in the face of sustained adversity, which requires vocational educators to press for eventual inclusion of vocational objectives in the assessment.

Since it usually is much easier to identify a problem than to solve it, and since a solution to this problem may be some time in development, perhaps we should consider briefly some constructive things which might be done while waiting for the Assessment doctor to arrive.

One possibility, which may go outside the usual procedure in this Assessment, would be to make use of indirect evidence concerning the acquisition of marketable capabilities. To some extent, this method is being use in C.O.D. for assessment of career implementation skills. It could be extended to include evidence from activities after school, during summers, even in school, as to the acquisition of skills. A fertile imagination should turn up numerous kinds and sources of information justifying some conclusions about how ready students or graduates are for vocational responsibility.

A second possibility, consistent with the C.O.D. framework, would be to expand the present coverage of "generally useful skills" to provide more systematically for the assessment of kinds of capabilities required in a wide

variety of occupations. Altman's (1966) formulation, based on empirical studies, provides a set of defensible content areas which he combines with a useful set of psychological processes to define a process x content matrix within which many marketable capabilities of general usefulness can be identified.

I would not want this suggestion to imply undue criticism of the exercises planned for this part of the C.O.D. assessment. They are, I think, among the best. I do think that if the objectives and their related exercises were sorted into Altman's content x process categories, we would find that a substantial number of categories have no representation in the assessment, that some important category groups are among the omissions, and that some improvements could be wrought in the distribution of exercises among categories, their work-relatedness, and their selection for explication of age-group differences.

In some ways, the simplest maneuver would be to go ahead and sample capabilities from the huge area of marketable skills, making the best possible assessment under the limitations which exist on time, money and subjects. It should be possible to identify a number of kinds of occupations which are among the most populous and, from these, to select a number of tasks which are widely required and reasonably measurable. Perhaps, a pool of such exercises could be started and increased with each assessment cycle. The effort could be made a bit more sophisticated if, for the selected test tasks, the prerequisite capabilities were identified and used in sequential fashion to assess progress at the several age levels or stages of progress. Some time might be saved in the administration of such exercises if some kind of sequential procedure were used, as suggested by Bohn, to identify in advance persons unable to do time-consuming exercises. In any case, it would be possible to report on the proportion of the population capable of a variety of significant, marketable kinds of performances, and it seems to me much better to report that much than to say nothing about an area of such considerable importance. To those who

feel squeamish about the inevitably miniscule proportion of tasks which can be sampled, I would argue that every other area of assessment would be subject to the same criticism if they had defined and analyzed an end-product goal with comparable rigor.

These suggestions are stop-gap measures, of course, though they are not clearly less effective than procedures applied in other areas of the Assessment. In the end, it would seem, the entire Assessment would benefit if it could be made from a more comprehensive and durable conceptual base than an inventory of current task requirements. In the area of vocational satisfaction and competence, it is important to remember that jobs are collections of tasks defined by a number of transient considerations. They can be changed and redesigned quite readily and, thus, provide an unstable basis for planning or assessing educational programs. But every task, regardless of economic value, can be viewed as a specific example of the application of some kinds of human capacities to some kinds of content. If we could describe the possible varieties of human activity by reference to domains within which generalization of learning occurs, we would be able to sample performance within a domain and estimate with some confidence the probability of successful performance on any particular activity in the domain.

Obviously, this is a long-term, difficult undertaking. But help is on the way. Altman's (1966) imaginative study of generalizable vocational capabilities, Fleishman's (1970) work on a taxonomy of human performance, Gagné's recent report to The American Educational Research Association on domains of generalization about learning, and the several scattered studies attempting to identify clusters of capabilities and jobs, all are related to the problem.

In closing, let me restate a point made earlier. I do not think vocational assessment is in worse shape than the other areas of assessment. I do think we

have tackled a much larger, more ambitious goal than most other areas and I think that we have analyzed that goal with unusual rigor. We have demanded more justification for each item of the assessment in vocational education than in any other. As a consequence, we know better than most what is required for an adequate assessment and we have exposed to full view the difficulties which would be found in any area to which a comparable process were applied.

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